

On the Type Specimen of *Cychrus morawitzi* GÉHIN (Coleoptera,
Carabidae), with Description of a New Subspecies from the
Southernmost Part of the Hidaka Mountains in
Hokkaido, Northeast Japan

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Abstract The type specimen of *Cychrus morawitzi* is illustrated and re-described. A new subspecies of the same species is described from the southernmost part of the Hidaka Mountains under the name *otto*.

The present paper is designed for dedication to the memory of the late Dr. Masataka SATÔ, one of the leading coleopterologists of Japan in recent years, who regrettably passed away at the age of sixty-nine in the summer of 2006.

Cychrus morawitzi GÉHIN (1885, p. 75) is a single component of the genus in Japan. The main distributional range of this small cychrine is Hokkaido (type locality: Hakodate) and the nearby islands such as Isls. Rishiri-tô, Rebun-tô, Teuri-tô, South Sakhalin and the southern part of the Kurils. The beetle also has narrowly isolated distributional area in the east-central part of Iwate Prefecture of northeastern Honshu. More than one hundred years after the original description, NAKANE (1989, p. 170) described two new subspecies, namely, *sapporensis* for the population distributed in Sapporo-shi of west-central Hokkaido and *iwatensis* for an isolated population occurring in Iwate Prefecture. Otherwise, however, no contribution has been made to the geographical variation and subspecific classification of this species. In my view, this unique cychrine is apparently polytypical and should be separated into several more geographical races. In the present paper, I at first give detailed photographs and redescription of the holotype specimen of *Cychrus morawitzi* now preserved in the Zoological Institute, Academy of Sciences, St. Petersburg, and then describe a new subspecies from the southernmost part of the Hidaka Mountains, which is considered to be most peculiar in both external and male genitalic features in all the populations of the same species.

Abbreviations used in the text are the same as those explained in my previous papers (e.g., IMURA, 1990, p. 139).

I am grateful to the late Dr. O. L. KRYZHANOVSKIJ of the Zoological Institute, Academy of Sciences, St. Petersburg, for kindly allowing me to examine the holotype of *Cychrus morawitzi* during my stay in that institute in the autumn of 1994. Hearty thanks

are due to Dr. Masahiro ÔHARA of Hokkaido University Museum, Sapporo, for giving me an opportunity to examine NAKANE's type specimens. Also I thank Dr. Shun-Ichi UÉNO (National Science Museum, Tokyo) for reading the manuscript of this paper.

Cychrus morawitzi GÉHIN, 1885

(Fig. 1)

Cychrus convexus MORAWITZ, 1863, Mem. Acad. imp. Sci. St.-Petersb., (7), 6, p. 7; type locality: Hakodate. [Nec HEER, 1837.]

Cychrus morawitzi GÉHIN, 1885, Catalogue synonymique et systématique des Coléoptères de la tribu des Carabides, p. 75. — ISHIKAWA, 1985, Coleopt. Japan Col., Osaka, 2, pl. 3, fig. 1 a.

Holotype. ♀, 15.8 mm in length (including mandibles) // *Holotypus* // Hakodate / 58-1 // 58. / *convexus* / MOR. // *Cychr.* / *morawitzi* / GÉH. // ROESCHKE det. // *morawitzi* GÉH. / *convexus* MOR. typ. //, preserved in the collection of the Zoological Institute, Academy of Sciences, St. Peterburg, Russia.

Head narrow and elongated, about twice as long as wide, with the eyes large and moderately protruded laterad; frons weakly convex above, with the surface densely scattered with large punctures often fused with one another; frontal furrows not so deeply concave and vaguely punctate on the surface; vertex to neck apparently depressed and densely scattered with large punctures; retinaculum bidentate, with the anterior tooth a little longer and more strongly bent posteriad than the posterior tooth on both sides; terminal segments of palpi apparently dilated; penultimate segment of labial palpus bisetose; median part of mentum flat, not forming a tooth protruding anteriorly; submentum asetose; apical seven segments of left antennae and apical four segments of right antennae absent.

Pronotum subcordate, only a little longer than wide, widest at apical quarter, and much more acutely narrowed towards apex than towards base; PW/HW 1.63, PL/PW 1.02, PW/PAW 1.67, PW/PBW 1.64, PBW/PAW 1.01; apical margin weakly emarginate; front angles obtuse and feebly produced anteriorly; sides gently rounded throughout, not sinuate before hind angles, and pronotal epipleura are invisible from above; hind angles subrectangular and hardly protrudent postero-laterad; basal margin weakly bisinuate; pronotal disc weakly convex above, with the surface densely scattered with large punctures often fused with one another; lateral margins feebly reflexed and clearly bordered throughout, the borders becoming a little narrower towards front angles and becoming a little wider near hind angles; only a single marginal seta inserted on both sides near the middle; basal foveae weakly and transversely impressed; median longitudinal line very finely impressed and partly unclear.

Elytra elliptical, robust, thick and strongly convex above, widest near the middle in dorsal view, and rather abruptly and steeply inclined near the bases and apices in lateral view; EW/PW 1.98, EL/EW 1.44; lateral margins not reflexed except for the basal portions near shoulders; elytral sculpture triploide heterodyname; primary intervals the strongest, indicated by rows of irregularly segmented costae or elongated tubercles with

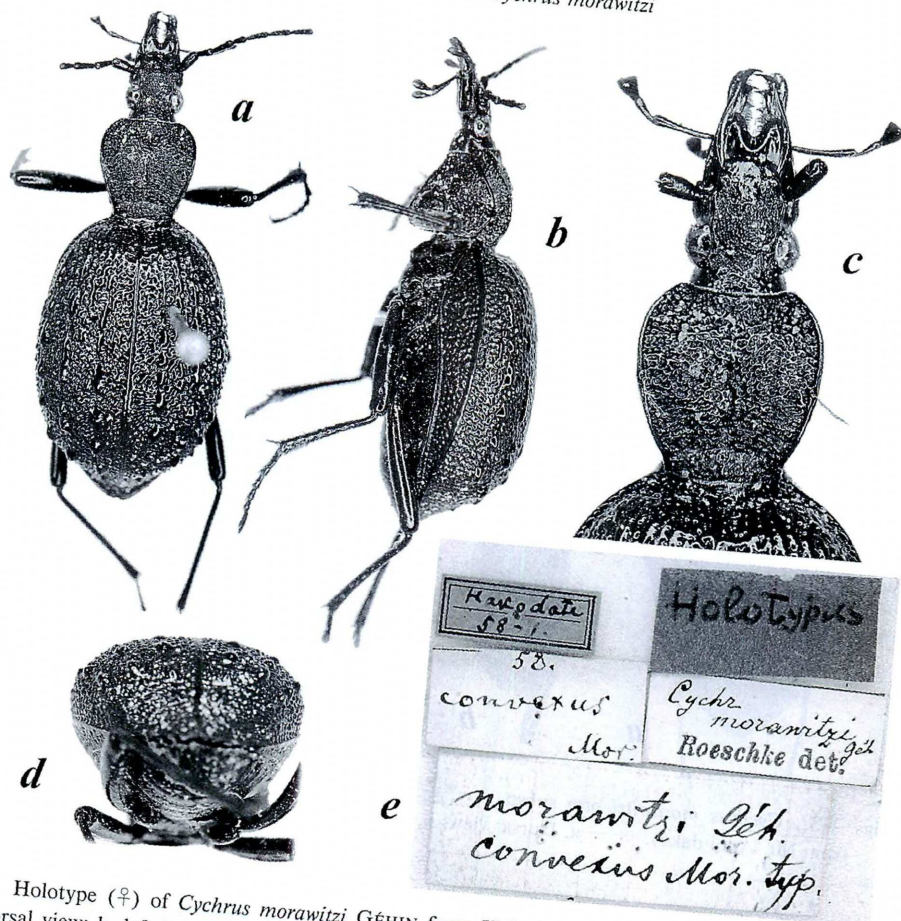


Fig. 1. Holotype (♀) of *Cychrus morawitzi* GÉHIN from Hakodate and its attached labels. — a, Dorsal view; b, left lateral view; c, head and pronotum in dorsal view; d, elytra and abdomen in posterior view; e, attached labels.

various length; secondaries weaker than primaries, indicated by rows of irregularly segmented costae or irregularly set large granules; tertiaries indicated by irregularly set rows of large granules often fused with adjacent intervals.

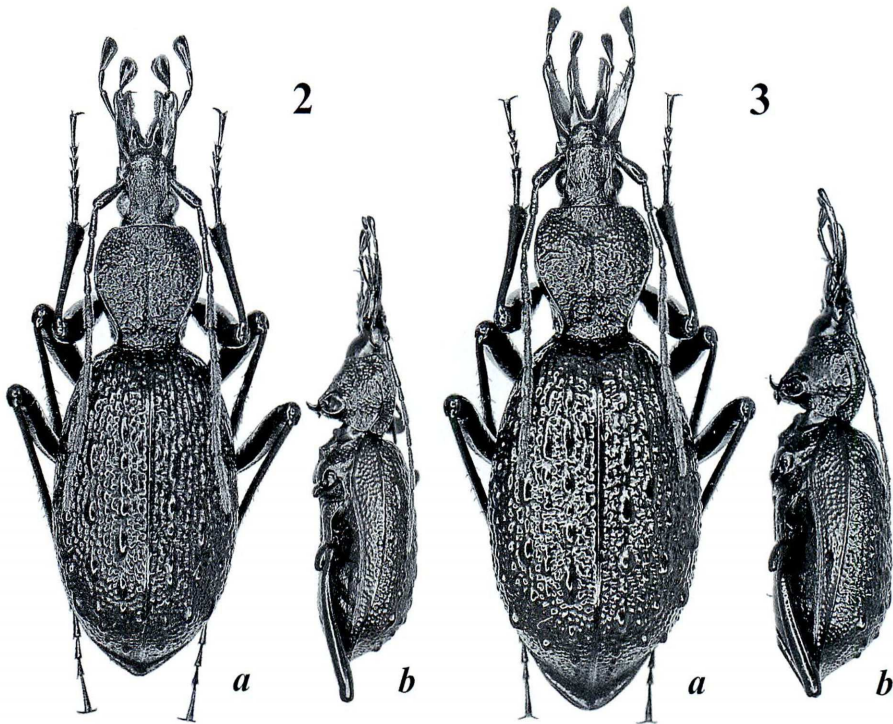
Pro- and epipleura densely scattered with large punctures often fused with one another; mesepisterna, metepisterna and sides of sternites a little more sparsely scattered with smaller punctures; sternal sulci unclear.

Cychrus morawitzi otto IMURA, subsp. nov.

[Japanese name: Erimo-sedaka-osamushi]

(Figs. 2, 3, 7)

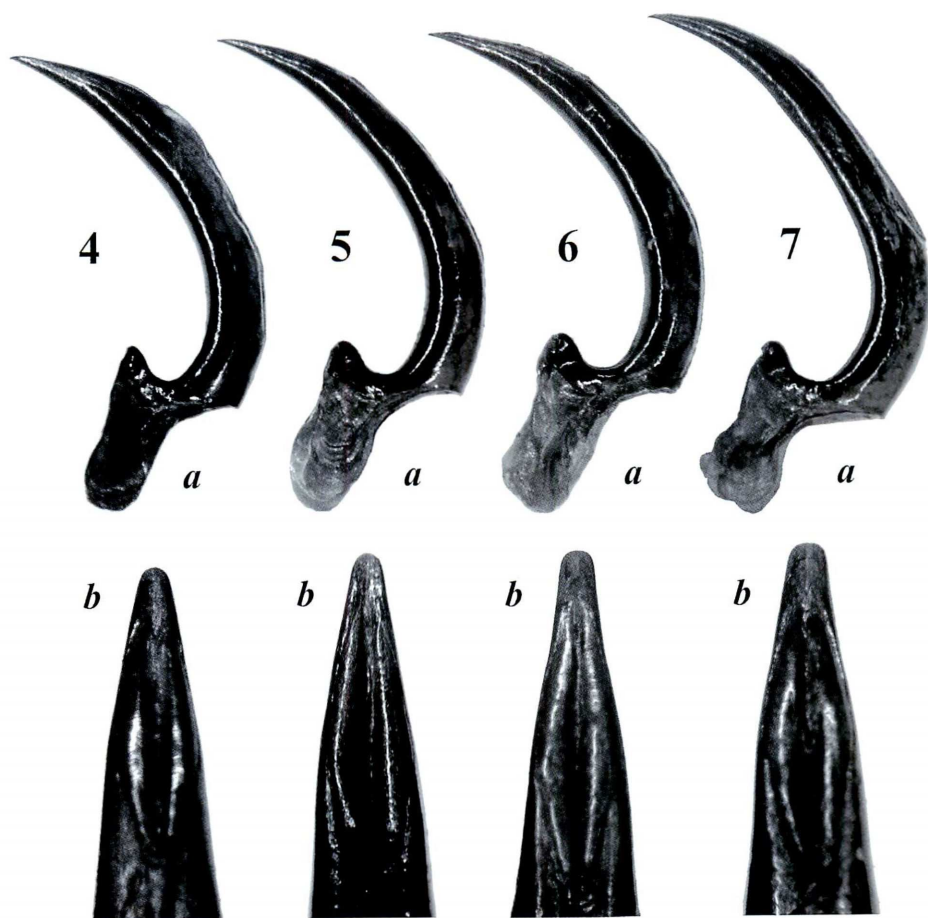
Length (including mandibles): ♂, 14.3–16.4 mm, ♀, 16.0–17.0 mm. Discriminated



Figs. 2-3. *Cychrus morawitzi otto* subsp. nov. — 2, ♂ (holotype from Shoya); 3, ♀ (paratype from Mt. Apoi-daké). — a, Dorsal view; b, left lateral view.

from all the known races of *C. morawitzi* by the following characteristics: 1) size apparently larger on an average; 2) head a little more elongated, about 2.1 times as long as wide, with longer mandibles and less strongly protruded eyes; 3) lateral sides of pronotum strongly sinuate behind, so that pronotal epipleura are visible from above; 4) elytra elongated oval, about 1.7 times as long as wide with effaced shoulders, and not so thick; 5) elytral disc much less strongly convex above, not so abruptly and steeply inclined near bases and apices, with the median portion much flatter in lateral view; 6) aedeagus as shown in Fig. 7, with the median portion apparently more elongated and hardly arcuate in lateral view, apical lobe wider, less acutely convergent towards the tip which is subquadrate in dorsal view.

Type series. Holotype: ♂, Shoya [庶野], ca. 30 m in altitude, in Erimo-chô of Horoizumi-gun, southern Hokkaido, Northeast Japan, 10-VIII-1983, Y. IMURA leg., preserved in the collection of the Department of Zoology, National Science Museum (Nat. Hist.), Tokyo (=NSMT). Paratypes: 1♂, 2♀♀, same data as for the holotype; 3 ♂♂, same locality, 10-VII-1983; 1♂, same locality, 23-VII-1983; 1♀, western foot of Mt. Apoi-daké, 50-100 m in altitude, in Samani-chô of Samani-gun, 6-VII-1982; 4♀♀, same locality, 10-VII-1983; 4♂♂, 4♀♀, same locality, 10-VIII-1983; 1♀, Horoman, ca.



Figs. 4-7. Aedeagus of *Cychrus morawitzi* subsp. — 4, Subsp. *iwatensis* from Gembê-daira, Iwate Pref.; 5, subsp. *morawitzi* from Hakodatê-shi, southwestern Hokkaido; 6, subsp. *sapporensis* from Mt. Moiwa-yama in Sapporo-shi, west-central Hokkaido; 7, subsp. *otto* from Shoya in Erimo-chô, southern Hokkaido. — a, Right lateral view; b, apical part in dorsal view.

50 m in altitude, in Samani-chô of Samani-gun, 22-VI-1985; 1♂, 4♀♀, same locality, 4-IX-1988, S. MANO leg.; 2♂♂, 1♀, southern side of Nozuka Tunnel, ca. 600 m in altitude, in Urakawa-chô of Urakawa-gun, 14-VIII-1984; all but MANO's samples were collected by Y. IMURA and preserved in the collection of Y. IMURA.

Distribution. Narrowly localized on the hilly to mountainous area in the southernmost part of the Hidaka Mountains near Cape Erimo-misaki in southern Hokkaido, Northeast Japan.

Notes. So far as I have examined, the populations distributed in the central to northern part of the Hidaka Mountains are a little smaller on average, with robuster body, more strongly convex elytra and shorter aedeagus, showing a tendency to

intergrade with subsp. *sapporensis*. The intervening zone or boundary of distributional ranges between the two subspecies is still uncertain, above all in the eastern (=Tokachi) side of the Hidaka Mountains.

Derivation of the new subspecific name. *Otto* [Ottô] is a nickname of the late Dr. Masataka SATÔ given by his wife, Sumiko. She preferred to call him by this name, since its pronunciation has various senses in Japanese, that is, Husband (*Otto*), frontal part of Friend (*Oto-modachi*), that of Father (*Otô-san*) and Oops (*Otto*), the last of which was one of SATÔ's favorite phrases often produced at an occasion he made a careless mistake.

要 約

井村有希：セダカオサムシ *Cychrus morawitzi* のタイプ標本に関する知見と日高山脈南端部に産する1新亜種の記載。—— サンクトペテルブルクのロシア科学アカデミー動物学研究所に保管されているセダカオサムシ *Cychrus morawitzi* のタイプ標本を初めて図示し、再記載するとともに、日高山脈南端に産する特有の形態形質をもつ集団を新亜種と認め、これを昨夏、急逝された故佐藤正孝博士に捧げてエリモセダカオサムシ *C. m. otto* という名のもとに記載した。新亜種名は、寿美子夫人が好んで用いられた同博士の愛称にちなむ。

References

- GÉHIN, J. B., 1885. Catalogue synonymique et systématique des Coléoptères de la tribu des Carabides, avec des planches dessinées par Ch. HAURY. XXXVIII+104 pp., 10 pls. Remiremont et Prague.
- HEER, O., 1837. Die Käfer der Schweiz mit besonderer Berücksichtigung ihrer geographischen Verbreitung. 2, 1-55. Zürich.
- IMURA, Y., 1990. Systematic position of *Carabus yunnanus* and the allied species (Coleoptera, Carabidae) from China, with description of a new species. *Elytra, Tokyo*, 18: 137-153.
- ISHIKAWA, R., 1985. Carabidae (Carabinae). In UÉNO, S.-I., Y. KUROSAWA, & M. SATÔ (eds.), *The Coleoptera of Japan in Color*, 2: 14-54 [incl. pls. 2-10]. Hoikusha, Osaka. (In Japanese, with English book title.)
- MORAWITZ, A., 1863. Beitrag zur Käferfauna der Insel Jesso. *Mém. Acad. imp. Sci. St.-Pétersb.*, (7), 6: I-III + 1-84.
- NAKANE, T., 1989. *Cychrus morawitzi* GEHIN [sic]. Classification. In YAMAYA, B., M. ARAI, K. KUSAKARI & H. YOSHIKOSHI (eds.), *Carabid Beetles in the East Japan*, 170. Bunanoki Shuppan, Yonezawa. (In Japanese, with English description.)